Life Happens, Period: Exploring the Social Rhythms Impacting Menstruation Tracking and Sharing

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Abstract
Menstruation is a significant rhythm throughout a person's life, body, and overall health. As menstrual tracking technologies increase in utility and popularity, there is a possibility that these devices or applications could be used continuously by individuals for 40+ years of their life. To remain in the user's life, menstrual tracking technologies must evolve with the user over time, supporting them throughout significant life events. Changes in health, relationships, personal goals, and life stages influence a user's motivation to track and share their menstrual data. We argue that the possibility of lifelong access to intimate information, such as menstrual data, requires tracking technology to adopt a holistic and supportive role. Respectful, sensitive, and emotionally-intelligent technologies can help empower the user's authority over their body and shared information, while promoting the education and normalization of menstruating bodies.

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CCS Concepts
•**Human-centered computing** → **Human computer interaction (HCI);** *Haptic devices;* User studies; Please use the 2012 Classifiers and see this link to embed them in the text:

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Introduction

On average, a person with a uterus will experience menarche around age 13 and will not stop menstruating until menopause at 53, approximately forty years later. The menstrual period follows one throughout their life and has significant role in the reproductive journey; therefore, as menstrual tracking increases in popularity, these tracking technologies have the potential for long-term adaptation. A question then arises: What does it mean for an application to account for and support a user through periods of physiological and social transition, diverse yet inevitable aspects of the human experience?

There are many times of change that occur in a user's life, affecting both their menstrual tracking and their desire to share data. Transitions that intersect with the subject of menstrual tracking seem to intertwine within two categories: physiological transitions and social transitions. Typical physiological changes related directly to menstruation include menarche, pregnancy, lactation, menopause, and periods of high stress. These moments of transition and change that disrupt an individual's "normal" cycle are not isolated, and often reflect the user's social, physical, or psychological state. If a user continues tracking during these moments, they may be in a more vulnerable position, making both the user and information they are tracking incredibly sensitive. Therefore, menstrual tracking technologies must be aware of, account for, and reflect in design these emotional shifts in human behavior.

Social transitions can include a diverse array of stakeholders: partners, parents, siblings, friends, and roommates. Stakeholders may not remain permanent figures in a user's life journey, as the nature of the relationships between stakeholders and the user change over time. While menstrual tracking apps are not principally social technologies, many have social features that enable the user to share their cycle with whomever they please. The user releases information specifically about their cycle (i.e. timing of period, fertile periods, and intensity of blood shed) to chosen stakeholders. As menstrual tracking apps become more holistic, information outside of the menstrual experience can be recorded and shared as well. For example, the popular app Clue has options to track emotional wellbeing, exercise, energy levels, and sexual activity. In the context of sharing information, the stakeholder and tracking technology are entrusted with a summary of the user's health, activity, and emotional state. Therefore, all parties involved should be both informed and aware of the significance of tracing and sharing this information in a holistic way.

In terms of design, menstrual tracking technologies should account for the intimate changes in a users life from both a tracking and sharing standpoint. As life changes, a user's relationship to the various stakeholders in their lives might change as well. A dilemma arises for the stakeholder, similar to following an ex-partner on Instagram, in what shared menstrual information means to them as their relationship to the user changes. For example, if a menstruating person becomes pregnant and then miscarries, their subsequent period, post-miscarriage, may hold a different meaning than before. Perhaps, the user may not want their best friend, who has access to their information, to know they've resumed menstruating. Taboo or stigmatized life events, such as miscarriage and abortion, can have a direct effect on one's understanding of their period, as well as alter their perception on sharing tracking data. Therefore, the design of menstrual tracking technologies should be sensitive and cognizant of these precarious life events and transitions. If menstrual tracking apps want to remain in the lives

of users for a long period of time, they must be humanistic and adaptive in their approach to data collection and emotionally-intelligent when sharing these data with the world.

We argue that menstrual tracking technologies must be aware of how to appropriately approach life events and transitions in ways that are sensitive, empathetic, and supportive. It is not enough to design technology as a passive receptacle, for these tracking systems hold deeply personal and intimate information. Lifelong technologies should act as a trusted partner, someone to provide connection, education, and support for the user. With these ideas in mind, we will be able to design tracking and sharing technology that proactively and holistically approaches a user's information, proving itself worthy of being by the user's side for years.

Design

When considering ways to advance the current state of menstrual tracking technologies, we propose the following three design implications: a) improved sharing methods focused on clearly communicating sharing preferences b) education for both the user and the stakeholders and c) platforms for community-building. Improving shared methods could appear as the monthly notification of sharing settings, easy access to classification and declassification of information available to stakeholders, and simple options for indicating significant reproductive or life events (i.e. breakup, high period of stress, abortion, and miscarriage). Education may look like the ability to access blog posts, medical information, and resources (i.e. book titles and helpful websites) through the tracking platform. Community-building could be an advantageous avenue for knowledge acquisition and support methods. We suggest potentially connecting individuals by user / stakeholder status or similar recorded life events in order to provide support outside of the technology itself. Creating a supportive, informed, and educated community of users and stakeholders has the potential to improve communication of topics related to menstruation and to work toward de-stigmatizing menstruation - a natural part of the human condition that has been shamed for far too long.

Conclusion

The tracking and sharing of menstrual information invites participation into conversations of the health and well-being of menstruating individuals. Both menstruation and menstrual tracking continues to be stigmatized in many parts of the world; however, menstrual tracking apps, with social capabilities, have opportunities to intimately connect users to their own health as well as to share intimate information with partners, friends, and family. These technologies can leverage the opportunity to educate both users and stakeholders, demystifying and normalizing menstruation. Through holistic and empathetic design, technology can play a significant role in the greater trajectory of supporting menstruating people over the course of their menstruating lives and beyond.